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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/702,484	10/31/2000	Eric J. Stotzer	TI-26738	9820

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EXAMINER

PAN, DANIEL H

ART UNIT PAPER NUMBER

2183

DATE MAILED: 10/01/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

09/702,484

Applicant(s)

STOTZER ET AL.

Examiner

pan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 October 2000.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 09/21/01.                      6) ☐ Other: \_\_\_\_\_.

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1. Claims 1-22 are presented for examination.
2. Applicant is kindly suggested to provide the SN of copending application cited in page 9 of the specification in next response.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1-5, 8-12, rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki (6,499,096).
4. As to claims 1, 8, Suzuki disclosed a method for minimizing code size comprising at least :
  - a) determining a latency between a defining instruction (the load) and a using instruction (the Add ) (e.g. see the cycles it takes in col.2, lines 45-58 );
  - b) inserting a NOP field (no operation) into a least one of the defining and using instruction (see the insertion of the no operation into the VLIW instruction in col.2, lines 45-58, see also fig.1 for the VLIW instruction construct).
5. Each sub-instruction is a portion or field of the VLIW instruction.
6. As to claims 2, 9, the no operation was also inserted into the load instruction (e.g. see the no operation in left sequence in 2' cycle ).

7. As to claims 3,10, the no operation was also inserted into the using instruction (see the no operation inserted in right sequence ).

8. As to claims 4,5,11,12, the no operation was also inserted at the end of the defining instruction [ load] (e.g. see the no operation in left sequence in 2' cycle ).

9.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 6,7,13,14 rejected under 35 U.S.C. 103(a) as being unpatentable over Mirapuri et al. ((5,590,294) in view of Tsushima et al. (6,044,450).

11. As to claims 6,13, Mirapuri disclosed a method for reducing the code size comprising at least :

a) determination of the latency after a branch instruction for initiating a branch from one point ( the branch) to another (the target) in an instruction stream (e.g. see col.2, lines 24-36);

b) inserting a nop into the sequence of instruction (e.g. see col.2, lines 38-39).

Mirapuri did not specifically show the insertion of his nop as a field into the branch as claimed. However, Tsushima disclosed method for inserting a nop field into each instruction in VLIW (e.g. see col.7, lines 24-38, see figs.2B,C for specific format of branch, see also fig.10 for nop in branch format). It would have been obvious to one

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of ordinary skill in the art to use Tsushima in Mirapuri for inserting nop field into the branch as claimed because the use of Tsushima could provide the processing ability of Mirapuri to adapt to different type of opcode operations at a predetermined format of a corresponding length with the respective delay, such as a very long instruction word, thereby reducing the number of nop instructions used, and therefore, the delay cycles of the respective shorter instructions executed concurrently, in doing so, decreasing the overall execution time of the processing, and it could be readily achieved by predefining the nop field of Tsushima into the configuration file of Mirapuri with a modified instruction control parameters, such as the operand type and length, such that the nop field of Tsushima could be recognized by Mirapuri, and because one of ordinary skill in the art should be able to recognize that the nop operation field of Tsushima could be used for the branch latency of Mirapuri because the number of delay cycles was applicable to each sub instruction of Tsushima including a branch, and for the above reasons , provided a motivation.

As to claims 7,14, Tsushima also affixed the nop at the end of branch (e.g. see the 10, lines 19-29).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 15-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Tsushima et al. (6,044,450) .

13. As to claims 15-22 Tsushima also deleted his nops from the code (VLIW) and inserting a nop field into a delaying instruction [load] (e.g. see col.10, lines 19-33, see also fig.10,11, load or branch).

14. As to claim 16, Tsushima 's delaying instruction [load] ( the second loading fig.11) was also locating at least one delayed effect instruction (load followed by nops in fig.10, see col.10, lines 30-33)

15. As to claim 17, Tsushima's deleted nops also were preceding a delay instruction (e.g. see fig.11, "4" before branch nop (0)).

16. As to claims 18, 21, the delay effect instruction was a load (see fig.10 [load]);

17. As to claims 19, 22, the delay effect instruction was a branch (see fig.10 [branch]).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan pan whose telephone number is 703 305 9696.

The examiner can normally be reached on M-F from 8:00 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Chan, can be reached on (703) 305 9712. The fax phone number for the organization where this application or proceeding is assigned are :

- a) before final 703 746 7239;
- b) after final 703 746 7238;
- c) customer service 703 746 7240.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305 3900.



DANIEL H. PAN  
PRIMARY EXAMINER  
GROUP